



STATE OF DELAWARE
DEPARTMENT OF NATURAL RESOURCES
AND ENVIRONMENTAL CONTROL
DIVISION OF WASTE AND HAZARDOUS SUBSTANCES
SOLID AND HAZARDOUS WASTE MANAGEMENT SECTION

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March 15, 2019

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Mr. Brian Bolvin, P.E.
Site Engineer
Delaware Recyclable Products, Inc.
Waste Management of Delaware, Inc.
246 Marsh Lane
New Castle, Delaware 19720

Subject: Review of: *Permit Modification Application (Volumes 1, 2 and 3) for Vertical Expansion, DRPI Industrial Landfill* (July 2018)

Reference: Permit Modification Application for Vertical Expansion
Permit SW-15/02; File Code: SW 02-D
19 0315 02-D DRPI Permit Application Response 2 SW-15-02

Dear Mr. Bolvin:

The Department of Natural Resources and Environmental Control (DNREC; Department), Solid and Hazardous Waste Management Section (SHWMS) has reviewed the *Permit Modification Application, (Volume 1 of 3, Volume 2 of 3 and Volume 3 of 3) for Vertical Expansion, DPRI Industrial Landfill, New Castle, Delaware* (Permit Application), prepared by Geosyntec Consultants, dated July 2018, submitted to SHWMS on July 20, 2018. The SHWMS submitted a review of the Permit Application to Waste Management on January 10, 2019. Geosyntec submitted a response to the review comments on March 7, 2019.

In order to have a complete application that can easily be shared with the public, please address the following items:

1. Please make the following modifications throughout the above listed documents, as applicable:
 - a. Please revise all document titles, references, headers, and footers, as applicable.
 - b. Please update all "Table of Contents", as applicable.

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2. 3.4.1 Operational Cover:

- a. Please correct the typo contained in the first paragraph of the section.

3. 4.5 Fire Prevention Plan:

- a. Please revise paragraph 5 of the section. DRPI must immediately report a fire to DNREC, and must submit a written account of the fire, as per permit conditions.

~~~~~ APPENDIX V-A: CONTINGENCY PLAN ~~~~~

4. 6.8 Odor:

- a. Please update the cover material frequency in the first paragraph of the section.

~~~~~ APPENDIX V-E: LEACHATE PRETREATMENT FACILITY ~~~~~

5. Section 1.2.3 Leachate Pretreatment System:

- a. Please update paragraph 1 of the section. The DRPI landfill recently changed the compound used to remove hydrogen sulfide from leachate.

6. Section 2.4 Non-Compliance Notification Requirements:

- a. Please correct the typo contained in the second paragraph of the section.

7. Section 3.3 Operator Responsibility:

- a. Please correct the typo contained in the first paragraph of the section.
- b. Please correct the typo contained in the 8th item listed in the section.

8. Section 5.1.1 Normal Operation:

- a. Please correct the typo contained in the last paragraph of the section.

9. Section 5.2.2 Operator's Duty:

- a. Please update the frequency of the air release valve inspections, to be consistent with Section 5.1.2.

10. Section 5.2.4 Emergency Operation:

- a. Please correct the typo in the section and the section heading.

11. Section 5.3.2 Operators Duty:

- a. Please correct the typo in the heading for the section.
- b. Please update the product used to achieve discharge limits.

12. Section 5.3.4 Emergency Operation:

- a. Please correct the typo in the section.

13. Section 7.1 Process Operations Records:

- a. Please update the product noted in the third item of the section.

14. Section 8.1 General:
 - a. Please correct the typo contained in the first paragraph of the section.
15. Section 8.3 Preventative Maintenance:
 - a. Please correct the typo contained in the second paragraph of the section.
16. Section 9.2 Vulnerability Analysis:
 - a. Please correct the typo contained in the ninth item in the section.
17. Section 10.4.1 Manholes:
 - a. Please correct the typo contained in the last paragraph of the section.
18. Section 10.4.3 Lighting:
 - a. Please correct the typos (2) contained in the section.
19. Section 10.4.4 Electrical Hazards:
 - a. Please correct the typo contained in the section.
20. Section 10.5.7 Summary of Safe Practices in Sewers, Pumping Station Wet Wells, and Other Confined Areas:
 - a. Please correct the typo contained in item b of the section.
21. Figure V-E-2:
 - a. Please update the chemical reference (Odophos) contained in Note 2 of the figure.

PART VI: ENGINEERING REPORT

22. Section 5.1 Introduction 9th Bullet Point:
 - a. Please revise the hydraulic conductivity from 1×10^{-3} cm/s to 1×10^{-2} cm/s, as per Delaware's *Regulations Governing Solid Waste* (DRGSW) Section 6.4.2.2.1.
23. Appendix VI-D.1 Liner Geomembrane Puncture Resistance Page 3:
 - a. Please justify the selection of MFs = 0.5 (sub-rounded particles) for AASHTO No. 57 stone, which is typically angular.
24. Appendix VI-D.1 Liner Geomembrane Puncture Resistance Page 6:
 - a. Please verify and revise (if necessary) the reference to Figure 2 in the bearing capacity calculations.
25. Appendix VI-D.2 Liner System Veneer Stability on Side Slopes Page 2:
 - a. Please confirm Equation 1, third term. Should "sin (2B)" be "2 sin (B)"? Please confirm the calculations are correct and revise if necessary.

26. Appendix VI-E.1 Leachate Management System Evaluation:

- a. The calculation states that runoff is not expected to occur from the open area during operations (10 to 15 acres cited in the calculations). Explain why the HELP model input shows 100 percent of that area can runoff. Presumably, modeling it this way would under-represent the estimated leachate head on the liner calculated by the HELP model.
- b. Justify why the average head on liner versus maximum head on liner from the HELP model output is used to demonstrate compliance.

27. Appendix VI-H.1 Geocomposite Drainage Layer Evaluation:

- a. Are the calculated d_{85} and d_{15} of the protective soil included in the Technical Specifications?
- b. Explain why the average annual head on cap versus the maximum head on cap from the HELP model output, used to justify the final cover system drainage layer capacity, is sufficient.

28. Appendix VI-H.2 Final Cover System Veneer Stability Evaluation:

- a. Please confirm Equation 1, third term shown on Page 2. Should “ $\sin(2B)$ ” be “ $2 \sin(B)$ ”? Please confirm the calculations are correct and revise if necessary.
- b. Page 3 of the appendix stated that “...a veneer stability failure of the liner system does not pose a threat to human life or the environment and a failure could easily be repaired...” No analysis is included in the Engineering Report that indicates what the impact of a veneer slope failure could be. This statement is also the basis for selecting a minimum factor of safety of 1.25 for slope stability in lieu of 1.5 if a failure could pose a threat to human health or the environment. Please provide justification for selecting the less conservative safety factor for veneer stability failure. Additionally, please provide analysis that indicates the impact of a veneer slope failure.

29. Appendix VI-H.4 Final Cover Settlement Evaluation:

- a. The calculation states “Consolidation parameters for the waste are discussed in the calculation package entitled ‘Settlement of Liner System’...” Please explain why the Modified Coefficient of Consolidation used in this calculation is 0.22 and the Modified Coefficient used on the “Settlement of Liner System” calculation is 0.12. Please make changes to the calculation as warranted.

~~~~~ PERMIT DRAWINGS (DRAWING NOS. 1 – 28) ~~~~~

30. Drawing 8 of 28:

- a. Please update the constructed and proposed areas for Cells 1 – 3 Overlay.
- b. Please verify that all underdrain and leachate risers are shown on the drawing, and are plotted correctly.
- c. Please clarify the leachate corridor points shown on the drawing.

31. Drawing 26 of 28:

- a. Please correct the location of the arrow shown on Detail 2-25 for the 6"x4" HDPE reducer.

Please provide a review of our presented comments and submit a response to include document revisions as necessary within ninety (90) days of receipt of this letter. Please submit a hard copy that includes a cover letter

addressing each of the above comments and a digital copy of the submission. The digital copy may be submitted via email to [Michael.Melito@state.de.us](mailto:Michael.Melito@state.de.us) (if under 20MB) or on digital disk.

Once the application package is deemed complete, the permit modification process will be initiated. The SHWMS staff is prepared to discuss or clarify our review. If you have any questions, please feel free to contact me at (302) 739-9403, option 8.

Sincerely,

A handwritten signature in black ink, appearing to read "Michael A. Melito".

Michael A. Melito  
Environmental Scientist  
Solid and Hazardous Waste Management Section

MAM:jmp  
MAM19005

cc: Jason Sunde, Environmental Program Administrator, SHMWS (electronic only)  
Arron Wayson, Environmental Compliance Specialist, SHWMS (electronic only)